Knowledge and Psychomotor Objectives

Medications Endorsement

Curriculum Objectives for the
EMT-Paramedic Medications

Montana Department of Labor and Industry
Board of Medical Examiners

The purpose of the Medication Endorsement for EMT-Paramedic is to provide the EMT-Paramedic with the knowledge and skills to effectively and safely utilize common medications during transfers between facilities. The Medication endorsement is intended to prepare the 911 paramedic to manage an emergency transfer of the occasional ER patient to an adjacent facility under the oversight of a physician.

Patient care should always be based on patient presentation and the Montana Prehospital Treatment Protocols and or Montana Inter-Facility Transport Protocols. Specific Board approved protocols exist for the Medication endorsement EMT-Paramedic and can be downloaded from the web site (www.emt.mt.gov)

EMT-P ENDORSEMENT: Medication

FORWARD

The Montana Board of Medical Examiners (BOME) developed the EMT endorsement process to provide the local EMS medical director the ability to expand the individual EMT scope of practice. The BOME has defined the "maximum allowable" skills for each endorsement and established statewide protocols. The endorsement process consists of education and verification.

The local EMS medical director is responsible for verifying an EMT's knowledge and skills for a particular endorsement. This can be accomplished via a training program; or the medical director may take into account an EMT's previous education, skill ability or other personal knowledge to determine whether an EMT meets the endorsement knowledge and skill requirements. The local medical director is responsible for the quality of all endorsement training via direct participation and/or oversight.

The medical director cannot exceed the scope of the endorsement, but may set limits on the ambulance service or the individual EMT. As an example, the medical director might wish the local ambulance service or an individual EMT to utilize pulse oximetry but not cardiac monitoring.

The endorsement material that follows provides the knowledge and psychomotor objectives at the specific endorsement level. Some endorsements may also include sample lesson plans for use in presenting the material. The endorsements (specifically at the EMT-Intermediate and EMT-Paramedic levels) may be non-specific in certain areas (such as specific medications or routes of administration) as the Board does not intend to "practice medicine". The medical director "practices medicine" and has the ability to determine the specific's concerning the endorsement. The Board approved protocols define the extent of the local medical directors flexibility: "…*The Board authorizes the service medical director to use the Board approved protocols in their entirety or may determine to limit individual EMT providers function / practice where appropriate and in accordance with provider's abilities. However, the service medical director may not significantly alter (change the performance expectations of the EMT) or expand approved Board protocols without first seeking Board of Medical Examiners approval.*" If the medical director wishes to request the Board to "significantly alter" the protocol there is a process identified in the rules for that to occur.

The endorsement levels at the EMT-Paramedic level are slightly different then at the other levels in that all of the endorsement levels are subsets of the Critical Care endorsement. Therefore if a Critical Care endorsement is granted to an EMT-P, they have completed all of the other endorsements.

This does not work in reverse though, if an EMT-P has all of the endorsement levels but Critical Care, Critical Care is not granted by default.

The endorsement process requires that the medical director complete a standardized "verification form" (certificate of completion) documenting that an individual EMT has the knowledge and skills identified at the specific endorsement level. The individual EMT then submits an application to the Board to establish the endorsement on their license. The medical director then has the option of granting permission to the individual EMT to perform the endorsement to the extent defined by the medical director. All forms and endorsement materials can be obtained from the web site; www.emt.mt.gov. Any questions or concerns can be addressed to Ken Threet at (406) 841-2359 or kthreet@mt.gov.

Knowledge and Psychomotor Objectives

MEDICOLEGAL ASPECTS

Apply the essential legal principles necessary to the practice of emergency medicine to the job a paramedic.
Recognize and discuss the legal risks and liabilities with inter-facility transfers.
Apply basic risk management principles.
Discuss the fundamental elements of litigation, hearings and peer-review proceedings.
Understand EMTALA and the implications for EMS
Appropriately document the event (inter-facility transports)
Identify areas of potential liability
State methods to minimize risk

INFECTION CONTROL & COMMUNICABLE DISEASES

Describe proper infection control procedures
Identify the mode of transmission and precautions to follow when treating a patient with the following infectious diseases:

- HIV
- Hepatitis
- Multiple-Antibiotic Resistant Bacteria
- Tuberculosis
- Meningitis

MAINTENANCE OF PARALYSIS AND SEDATION DURING VENTILATOR TRANSPORT

Provide Overview of RSI
Identify pharmacologic agents utilized during ventilator transports.
Describe why sedative medications should usually accompany the use of paralytic agents.

Identify transport considerations for patients intubated with the RSI technique.

INVASIVE LINES

Differentiate between types of invasive lines
Identify indications for invasive lines
Discuss methods for assessing invasive lines
Differentiate between normal and abnormal assessment findings
Identify transport complications of invasive lines

BLOOD ADMINISTRATION

Differentiate between antigens, natural antibodies and acquired antibodies
Identify antibodies and antigens associated with specific blood types
Define Rh factor
Identify seven types of blood component therapy
Identify indications for blood administration
Describe the procedure for blood administration
Identify the signs and symptoms of transfusion reactions
Describe the management procedures for transfusion reactions
Describe the indications for administration of whole blood and packed red blood cells
Describe the indications for typing, screening and cross matching blood
Describe the ABO system for matching blood
Describe the characteristics of blood products
Describe the procedure for administration of whole blood or packed red blood cells.

SEDATIVES

Identify the indications, mechanism of action, pharmacokinetics, dosing and side effects of haloperidol
Identify the mechanism of action of benzodiazepine drugs
Compare the dosing and side effects of diazepam, lorazepam and midazolam
Identify the indications, mechanism of action, pharmacokenetics, dosing and side effects of flumazenil
Identify the indications, mechanism of action, pharmacokinetics, dosing, side effects, drug interactions and administration considerations of propofol

ANALGESICS

Identify the mechanism of action, pharmacokinetics, and side effects of morphine
Identify the mechanism of action, pharmacokinetics, and side effects of naloxone

PARALYTICS

Identify the mechanism of action, pharmacokinetics, and toxicity of Succinylcholine
Identify the indications, mechanism of action, pharmacokinetics, side effects and drug interactions of pancuronium, vecuronium and atracurium
Identify the order of paralysis
Discuss the adverse effects of prolonged paralysis
Identify the role of “train of four” monitoring when using paralytics

ANTIHYPERTENSIVES

Compare the mechanism of action, dosing, pharmacokinetics, and adverse effects of captopril, nifedipine and clonidine
Identify the mechanism of action, pharmacokinetics, dosing, toxicity and administration considerations of nitroprusside
Identify the mechanism of action, pharmacokinetics, dosing and adverse effects of labetalol
Identify the pharmacology, pharmacokinetics, dosing and toxicity of diazoxide

VOLUME EXPANDERS

Compare the advantages and disadvantages of crystalloids and colloids
Compare the use, dose and adverse effects of albumin, plasma protein fraction, Hetastarch and Dextran

VASOPRESSORS

Identify the indications for vasopressors
Compare the effects, dosing and adverse effects of dopamine, epinephrine, norepinephrine (Levophed), phenylephrine and dobutamine

BRONCHODILATORS

Identify the pharmacology and effects of beta receptor stimulation for beta agonists
Compare the pharmacokinetics, dosing, delivery, and adverse effects of albuterol, epinephrine and terbutaline
Identify the pharmacology, metabolism, adverse effects, drug interaction and dosing of metoproterenol and theophylline
Identify the pharmacology and dosing of anticholinergics
Compare and contrast anticholinergics and beta agonists
Identify the pharmacology and uses of magnesium

ANTIARRHYTHMICS

Identify the mechanism of action, ECG effects, uses, pharmacokinetics, dosing and toxicity of Class IA antiarrhythmic drugs
Identify the mechanism of action, ECG effects, uses, pharmacokinetics, dosing and toxicity of Class IB antiarrhythmic drugs
Identify the mechanism of action, ECG effects, and uses of Class IC antiarrythmic drugs
Identify the mechanism of action, ECG effects, and uses of Class II antiarrythmic drugs
Identify the mechanism of action, ECG effects, uses, pharmacokinetics, adverse effects and drug interactions of Class III antiarrhythmic drugs
Identify the mechanism of action, ECG effects, and uses of Class IV antiarrythmic drugs
Compare the pharmacokinetics, dosing and adverse effects of verapamil and diltiazem
Identify the mechanism of action, ECG effects, uses, pharmacokinetics, administration considerations, drug interactions and toxicity of adenosine

ANTIANGINALS

Identify the pharmacology, dosage forms, pharmacokinetics, administration considerations, adverse effects, and tolerance considerations of nitrates
Identify the uses, side effects and patient selection criteria for beta blockers
Identify the uses, contraindications, and side effects of calcium channel blockers

THROMBOLYTICS

Identify the absolute and relative contraindications to thrombolytic therapy
Compare the pharmacology, pharmacokinetics, dosing and adverse effects of TPA, streptokinase and APSAC
Discuss the benefits of thrombolytic therapy

ANTICOAGULANTS

Identify the mechanism of action, dosing, and clinical trial findings of aspirin as an anticoagulant
Identify the mechanism of action, dosing, monitoring parameters, adverse effects and clinical trial results of heparin
Identify the pharmacology, indications, monitoring parameters, drug interactions and adverse effects of warfarin

ANTIBIOTICS

Identify the pharmacology and uses of antibiotics

ETOMIDATE

Identify the indications, mechanism of action, pharmacokinetics, and side effects of etomidate

TRANSPORTS: START TO FINISH

Differentiate operational aspects of inter-facility and conventional prehospital care
Identify four major opportunities for positive interaction that exist during a inter-facility transport
Incorporate prospective medical control into the care of patients
Identify critical decision points in a transport event
Develop an event flow sheet
Identify essential patient perceptions of quality service
Understand the role of family members in inter-facility transport
Recognize situations warranting diversion or interception
Incorporate unique management tactics with moribund patients and families

PEDIATRIC CONSIDERATIONS

Identify various histories and general principles for pediatric assessment
Define the primary cause of cardiac arrest and list several risk factors
Describe principles of general treatment before and during the transport of a pediatric patient

OBSTETRICAL/GYNECOLOGICAL CONSIDERATIONS

Identify various histories and general principles for OB/GYN assessment
Define the primary cause of cardiac arrest and list several risk factors
Describe principles of general treatment before and during the transport of a OB/GYN patient

CASE STUDIES

Integrate topics learned with case scenarios